

Commitment Cost Default Energy Bids Enhancements (CCDEBE) Business Rules		
Paragraph	Policy Statement	High Level Project Objectives
CAISO proposes to allow market-based offers for each component of the supply offer subject to mitigation and to allow greater flexibility to negotiate or adjust each component. The purpose of this section is to describe the CAISO proposal to allow greater bidding flexibility by allowing minimum load costs to vary by hour.	General Information	<ul style="list-style-type: none"> * MPs can submit market-based offers for each component of the supply offer. * MPs shall be able to negotiate or adjust each component of the supply offer. * MPs can submit minimum load costs that vary by hour. * Market based offers will be subject to mitigation.
CAISO shall clarify in its Business Practice Manuals (BPMs) that the technology agnostic definition of its supply offer components should be revised accordingly.	General Information	<ul style="list-style-type: none"> * CAISO will revise its definitions for start-up, transition, minimum load, and energy as: <ul style="list-style-type: none"> • Startup costs – costs associated with bringing a unit online from being shut down or a state not capable of producing energy into a mode where it can produce energy, • Transition costs – costs associated with moving from one configuration to another for multi-stage generators (MSG), • Minimum load costs – operating the unit at the minimum operating level (Pmin) where a unit cannot drop below without compromising the unit's operation, including costs of producing energy up to Pmin as well as run hour costs unrelated to any energy production possible even for resources with 0 MWh minimum operating level, and • Incremental energy costs – costs associated with producing energy above Pmin expressed

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		as a \$/MWh value.

General
Rules

- a) CAISO will continue to honor existing policy allowing MPs to submit for all hours or select hours to participate (all resource types) if not a Must Offer Obligation (MOO).
- b) CAISO will continue to NOT insert bids into the market for resources without a must offer obligation, except for existing rules mandated by previous policy (e.g. bid insertion if awarded AS).
- c) Must-offer obligations for RA resources will not change as a result of this project.
- d) Submission business rules for RA resources will continue as existing.
- e) CAISO will continue to honor the following: day-ahead and real-time markets will not dispatch resources during hours without a minimum load bid, except in conditions mandated by operating constraints or terminal conditions, which have been agreed to by a multi-party discussion.
- f) CAISO will continue to honor the following: day-ahead and real-time markets will not commit online a previously offline resource in an hour for which a bid does not exist.
- g) CAISO will apply caps to each of the four market-based bids (start-up, minimum load, energy, and transition).
- h) CAISO proposes to initially set the multiplier (see below) at 200% as a temporary measure in effect until the CAISO can evaluate the success of the new mitigation paradigm. ISO will propose to automatically increase the scalar from 200% to 300%

(depending upon decrease in headroom scalar) in 18 months after effective date dependent on a stakeholder process to analyze the mitigation performance after 12 months of data is available. If design issues are identified leading to high false positives or false negatives, CAISO would file to delay the automatic increase to allow for CAISO and its stakeholders to evaluate and address identified issues.

i) CAISO does not propose to change the existing Real-time market re-bidding rules (see below).

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	Support changes to energy bid rules	<ul style="list-style-type: none"> a) CAISO will continue to support hourly market-based energy bids (existing) that can have differing values. b) Cap on virtual bids and system resources is \$2000/MWh c) Cap on energy bid for other resources is $\min(\max(1000, \text{reference level}), 2000)$
	Support hourly market-based minimum load offers subject to caps	<ul style="list-style-type: none"> a) The ISO will support different hourly minimum load cost bids that can be revised in each hourly bid submission window in the Real Time. System will assess minimum load cost based on this variation subject to existing rebidding rules. b) CAISO will enhance the DAM market bidding process to support hourly minimum load cost bids that can have differing values. System will assess value of minimum load based on this variation. c) Cap on market-based minimum load cost bid is configurable % multiplier of the minimum load cost reference level. Existing floor at \$0/hour will be retained. d) CAISO will allow resources to have non-zero values even if their minimum load energy is 0.

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		<p>e) CAISO currently supports the following re-bidding rules for minimum load costs: costs can be re-bid in hours without an IFM award or hours with RUC schedules (RUC capacity or RUC awards) for resources that received a binding RUC start-up instruction. (E.G. Non-RA resource A receives binding RUC awards in HE 1-22 and is a long-start unit. In real-time, Resource A can rebid minimum load costs for HE23 and HE24 where HE1-22 are locked.) In addition, minimum load costs can be rebid after a binding RTM commitment once the resource has completed its MUT (Minimum Up Time).</p>

	<p>Support market-based start-up and minimum load cost offers subject to caps</p>	<p>a) CAISO currently supports hourly start-up and transition cost bids for each market in the Real-Time. However, any updates for a particular hour will apply for the full time market horizon for all markets whose binding startup instruction is within that hour. CAISO is proposing to retain this functionality.</p> <p>b) CAISO currently supports one start-up and transition cost bid curve that will apply for commitments in any hour bid for the DAM. CAISO is proposing to retain this functionality.</p> <p>c) CAISO will leverage the existing functionality so that market-based start-up and transition cost bids can be submitted.</p> <p>d) Cap on start-up cost bids is configurable % multiplier of the start-up cost reference level. Existing floor at \$0 will be retained.</p> <p>e) Cap on transition cost bid is configurable % multiplier of the transition cost reference level. Existing floor at \$0 will be retained.</p> <p>f) Existing cap (and floor) on downward transition cost bids at \$0/MWh is retained.</p> <p>g) CAISO currently supports the following re-bidding rules for start-up and transition costs: costs can be re-bid in hours without an IFM award or hours with RUC schedules (RUC capacity or RUC awards) for resources that received a binding RUC start-up instruction. (E.G. Non-RA resource A receives RUC awards in HE 1-22 and is a long-start unit. In real-time, Resource A can rebid start-up and minimum load costs for HE23 and HE24 where HE1-22 are locked.)</p>
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CAISO proposes to consider an interval without a minimum load offer analogous to an ISO commitment period and will settle a resource based on its minimum load reference level (e.g. proxy costs - negotiated or estimated).	Apply settlement rules when no minimum load cost offer present	CAISO will settle interval without a minimum load offer that resulted in market dispatch based on its minimum load reference level.
CAISO proposes to consider an interval without a minimum load offer analogous to an ISO commitment period and will settle a resource based on its minimum load reference level (e.g. proxy costs - negotiated or estimated).	Apply settlement rules when no minimum load cost offer present	CAISO proposes to cover an interval without startup offer (e.g. exceptional dispatch commitment) for an ISO commitment period by using the reference level commitment costs.
CAISO proposes to ensure the settlement of exceptional dispatches (ED) use the commitment cost bid considered by the CAISO when it issued the exceptional dispatch. The CAISO will settle these exceptional dispatches using bids considered when the initial decision was made and not accept revised bids through the instruction period.	Apply settlement rules to settle exceptional dispatches at commitment cost bids considered in initial instruction for the instruction period	<ul style="list-style-type: none"> * Settlement of binding incremental (min goto) and fixed exceptional dispatches shall be set at the commitment cost bid when the ISO issued the ED. * The ISO shall settle these exceptional dispatches using bids considered when the initial decision was made and not accept revised bids through the instruction period. (This will not impact SIBR). * System shall use bids that applied at the time of the ED decision, not at the start time of the ED. * Propose that settlement of ED that span multiple trade dates uses the higher of the reference level or original bid. If reference

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		level goes higher in the next day, you will be made whole for next day costs.
New - will be in revised draft final proposal	Apply settlement rules to settle resources through the ramp down periods	<ul style="list-style-type: none"> * Commitment costs should be settled at commitment cost bids used to settle the interval from which the resource is being dispatched down at full ramp * Applies to intervals where resource is in full downward ramp *Note: Applies to start-up, transition, and minimum load bids.

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ISO proposes to add a negotiated option for commitment cost reference levels.	Add negotiated option for commitment cost reference levels	<ul style="list-style-type: none"> *MPs can select either an estimated or negotiated option for commitment cost reference levels * If MP selected negotiated option, all cost components must then be negotiated. * CAISO will negotiate tailored formulas for the supply offer components (start-up, transition, minimum-load, and energy) * CAISO current negotiation process will be expanded to include commitment cost components. * No changes to timeline or procedures for negotiations of reference level. • Complex formulations of delivered fuel price that do not assume the next day gas index is the appropriate price benchmark for the resource (i.e. fuel replacement costs). • Additional cost components not included in the generic reference level formula

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Supplier seeking a negotiated commitment cost reference level would be able to seek consideration of tailoring its reference level to reflect more complex cases than a generic reference level formula could.	Add negotiated option for commitment cost reference levels	<ul style="list-style-type: none"> * ISO would seek sufficient justification tailoring the formulas. * Integration needs to occur between ISO agent system and ISO systems.
CAISO proposes to allow suppliers to submit ex ante, prior to the market run, an adjustment to its reference levels for commitment costs or energy costs.	Allow Supplier provided ex ante reference levels adjustments subject to verification requirements	<ul style="list-style-type: none"> * CAISO will support this ability via modification of the reference levels for the three components (energy, start-up, and minimum load). * MPs can submit a request to adjust the value of their reference level prior to the market close. * MPs would initiate a request through submitting cost-based bid (up to three components) prior to market close along with the market based bid (up to three components). * The cost-based and market-based bid must be submitted prior to market close (up to three components on each type of bid). * MP is eligible to use tool regardless of the option selected for their reference levels. * CAISO will validate that the MP is not on ineligible list.

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CAISO proposes to allow suppliers to submit ex ante, prior to the market run, an adjustment to its reference levels for commitment costs or energy costs.	Allow Supplier provided ex ante reference levels adjustments subject to verification requirements	<p>* Reference level adjustment request functionality is available to:</p> <ul style="list-style-type: none"> -All resources modeled as a generating resources -CAISO SC and EIM SC -Day-ahead and real-time <p>* CAISO will apply cap to EIM SCs without market-based rate authority so that market-based energy bids would be capped to adjusted or unadjusted energy reference level.</p> <p>* Note: EIM SC without market-based rate authority will have met bidding rules if market-based energy bid is equal to energy reference level adjustment request.</p>

<p>ISO proposes that suppliers should be able to utilize this tool to reflect changes in their expected fuel or fuel equivalent costs to reflect:</p> <ul style="list-style-type: none"> • Changes in cost expectations of the delivered fuel price especially for: <ul style="list-style-type: none"> o Fuel-switching resources to revise reference level to reflect the higher cost fuel if the resource needs to switch to that prime mover to continue to provide power and effectively allow for improved ability for CAISO to support reliability o Resources that have opportunity to procure fuel from multiple locations or transport its fuel supplies across multiple pipelines to revise reference levels to the delivered fuel price cost expectation specific to the most likely procurement or shipping decision that deviates from its registered fuel region • Changes in delivered fuel price to deviate from benchmarking power production at next day gas index to a non-standard, custom market prevailing price. <ul style="list-style-type: none"> o Gas system constraints and the risk of incurring gas system penalties when they would unavoidably incur penalties by following CAISO dispatch instructions; this allows the ISO dispatch to consider the gas constraint even in the absence of enforcing a maximum gas burn constraint within the electric markets. o Changes in fundamental drivers that impact the fuel equivalent costs of non-gas fired resources. 	<p>Allow Supplier provided ex ante reference levels adjustments subject to verification requirements</p>	<ul style="list-style-type: none"> * CAISO will support use of cost based bids under certain conditions * MPs can submit reference level adjustment requests (cost bids) to reflect changes in MPs expected fuel or fuel equivalent costs under those conditions *CAISO will approve dispatch and settlement based on adjusted reference levels under those conditions * Purpose of the tool is to ensure adjusted reference levels are reasonable reflections of cost expectations at the time MP submits request. <ul style="list-style-type: none"> o Changes in fundamental drivers that impact the fuel or fuel equivalent costs of gas or non-gas fired resources including GHG costs (if applicable).
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CAISO proposes to require subjecting adjustments on either commitment cost or energy cost reference levels to verification requirements prior to the market run (ex ante verification) and if unable to verify in time will verify afterward (ex post verification). To be included in the market and to determine energy prices, the CAISO will require the requested adjustment to be verified prior to the market run (i.e., ex ante verification).	8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements	*CAISO will verify the cost based bid against reasonableness thresholds. * Imports, exports, and convergence bids will not be subject to verification. * All other bids will be subject to verification. * Validation rules will be automated.

CAISO proposes to require subjecting adjustments on either commitment cost or energy cost reference levels to verification requirements prior to the market run (ex ante verification) and if unable to verify in time will verify afterward (ex post verification). To be included in the market and to determine energy prices, the CAISO will require the requested adjustment to be verified prior to the market run (i.e., ex ante verification).

8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements

- * Calculate resource-specific reasonableness threshold for each component of the bid (reasonableness thresholds)
- * Reasonableness Threshold is the reference level formulas PLUS volatility scalar applied to the commodity price of gas within the gas price index (Aliso 1 scalar formula)
- * Applies to both day-ahead and real-time
- * For gas resources - volatility scalar will be 125% for Mondays and weekdays for which a next day index is not published the day before (i.e. the day after a holiday) and 110% for other days. Volatility scalar is multiplied by the next day gas index to get a scaled gas price index.
- * For non-gas resources - volatility scalar will be 110%. Volatility scalar. For energy - volatility scalar is multiplied by the Master File average cost field to get the scaled fuel equivalent cost. For minimum load - volatility scalar is multiplied by the Master File average cost field at segment 1 and the min_load_cost to get scaled fuel equivalent cost. For start-up - volatility scalar is multiplied by the Master File str_startup_cost field to get scaled fuel equivalent cost.
- * No reasonableness threshold will be calculated for transition costs.
- * Reference level formulas will not be adjusted other than to apply volatility scalar
- * CAISO will have the ability to adjust the reasonableness threshold by resource to reflect the resource-specific feedback loop term

		<p>*Note: 125% and 110% will go in tariff * CAISO will apply a reasonableness threshold to energy reference level adjustment at the lower of the resource-specific reasonableness threshold or the \$2,000/MWh cap for use in market.</p>
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CAISO proposes to require subjecting adjustments on either commitment cost or energy cost reference levels to verification requirements prior to the market run (ex ante verification) and if unable to verify in time will verify afterward (ex post verification). To be included in the market and to determine energy prices, the CAISO will require the requested adjustment to be verified prior to the market run (i.e., ex ante verification).	8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements	* CAISO will notify SCs if they are capped prior to market run * CAISO will notify SCs if their energy reference level default calculation exceed \$1,000/MWh (existing process) *Note: Notifying when above \$1,000/MWh addresses need for RDRRs to rebid above \$1,000/MWh in lieu of their CPUC requirement at 95-100% of market-based bid cap *Note: To the extent possible, SC will be notified as soon as verification is complete for their resource. For SCs that are capped due to failure to submit reference level adjustment, this would allow them to correct their error and re-bid.
CAISO proposes to require subjecting adjustments on either commitment cost or energy cost reference levels to verification requirements prior to the market run (ex ante verification) and if unable to verify in time will verify afterward (ex post verification). To be included in the market and to determine energy prices, the CAISO will require the requested adjustment to be verified prior to the market run (i.e., ex ante verification).	8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements	* CAISO will allow SCs to pursue a manual consultation for reasonableness threshold for energy costs above \$1000/MWh that do not utilize automated screening.

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Re-calibrate penalty price parameters to support possibility of energy offers at \$2,000/MWh.	8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements	<ul style="list-style-type: none"> * CAISO will re-calibrate the penalty price parameters around the \$2,000/MWh hard cap. * CAISO's new penalty price parameters will be in effect at all times.

CAISO proposes to require subjecting adjustments on either commitment cost or energy cost reference levels to verification requirements prior to the market run (ex ante verification) and if unable to verify in time will verify afterward (ex post verification). The CAISO will review after the market run (ex post verification) whether it can verify that the [unverified] adjustment followed the guidelines for use of the tool.

8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements

*MPs can submit a request to be verified after-the-fact consistent with existing dispute processes and timelines. The submission must contain supporting documentation.

* CAISO will perform an after-the-fact review of any reference level adjustment requests that are not approved ex ante.

- After-the-fact recovery will leverage the bidding rules enhancements process which will require invoice dated after-market that produced relevant market award, attest that no pooling arrangement or balancing rules would allow fuel management other than immediate procurement; and if gas balancing rules would allow additional time to manage then do not verify:
 - After-the-fact uplift recovery will be based on actual costs
 - Opportunity costs (calculated or negotiated per CCE3 policy) are actual costs
 - After-the-fact recovery may not include any adders above cost such as risk-related adder

* If flagged verified, CAISO will revise costs in uplift calculations which will be at resource and supply offer component level (resource id, energy cost; resource id, minimum load cost; resource id, start-up; resource id, transition cost).

* If flagged unverified, CAISO will notify the MP that the reference level adjustment was rejected for levels above the soft cost cap for each component.

*CAISO is proposing audit authority specific to

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<p>If the CAISO cannot verify before the applicable market run, it will not include the adjustment in the market but will include any adjusted reference level cost in uplift settlements calculations if it is verified in an ex post verification.</p>	<p>8.2.3.2. Allow Supplier provided ex ante reference levels adjustments subject to verification requirements</p>	<p>the tool to allow it to audit requests that passed the automated screen if it identifies need to do so.</p> <ul style="list-style-type: none"> * Audit would be performed to verify that the submissions was a reasonable reflection of cost expectations at the time submitted given available information to the SC * CAISO will recalculate bid cost recovery settlement with revised cost values (existing requirement) * CAISO will make no changes to the actual settlement system. The system changes shall be made upstream to reduce the impacts on Settlement calculations. * If reference level adjustments are not adjusted based on ex post verification, the resulting BCR settlement shall not be subject to the CAISO dispute process (MP can still go to FERC).
<p>CAISO proposes to provide the tariff authority to file at FERC for costs that are incurred but outside of the conditions and verification rules that the CAISO will administer in either ex ante or ex post review. This will provide supplies with the ability to recover extraordinary costs under extraordinary conditions and circumstances.</p>	<p>8.2.3.4. Make permanent after-the-fact filing right at FERC for energy costs</p>	<ul style="list-style-type: none"> *Extend filing right to MPs at FERC for fuel procurement costs in its incremental energy costs * In the event it cannot successfully verify a reference level adjustment request for any component of the request that MP should pursue tariff filing at FERC.

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CAISO clarifies that if a resource submits an ex ante reference level adjustment and is successfully verified through the automated process, the market-based offer cap at 200% is evaluated against the revised reference level not the estimated or negotiated reference level.	8.3.3.1. Support market-based commitment cost offers subject to caps	* As basis for cap, CAISO must use adjusted reference level instead of the default reference level (generated by ISO) option if a resource submits a reference level adjustment. Adjusted reference level is requested amount up to the reasonableness threshold.

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CAISO proposes to introduce commitment cost market power mitigation in all unit commitment processes.	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	<p>CAISO will enhance its dynamic market power mitigation test including but not limited to testing commitment cost bids. (See Appendix in Revised Draft Final Proposal)</p> <ul style="list-style-type: none"> * CAISO will perform MPM on energy bids same as today except for the enhancement of considering shutdown in DCPA. * CAISO will additionally perform MPM on commitment costs in each market where commitment may take place. * CAISO will test the following constraints for competitiveness: <ul style="list-style-type: none"> o (1) Any binding transmission or corrective capacity constraint o (2) Any critical transmission or corrective capacity constraint (binding/nonbinding) o (3) An EIM BAA power balance constraint with a positive shadow price * CAISO will test resources on non-competitive constraints that are binding transmission or corrective contingency constraints (CME) or an EIM BAA power balance constraint and mitigate commitment costs for resources with negative shift factors. * Retain exemption for participating load, PDR, and NGR. Mitigation changes are pending under EIM consolidated. * CAISO will test resources on non-competitive

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		<p>non-binding critical transmission or corrective contingency constraints and mitigate commitment costs of resources with $DOT \geq (\text{limit-flow})$.</p> <p>*CAISO will mitigate all units within a non-competitive MOC. Non-competitive will be defined by a static list and determined via advanced studies.</p>

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CAISO needs to add a market power mitigation application in its short-term unit commitment run. CAISO proposes to add a market power mitigation process to the short-term unit commitment run that would produce only the mitigation criterion for mitigating commitment cost components.	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	<ul style="list-style-type: none"> * CAISO will add a market power mitigation application in STUC. * Advisory commitments with commitment cost that were mitigated in prior UC runs will continue to be tested and updated until receiving binding commitment. * Binding commitments in STUC for commitment cost that have been mitigated will remain mitigated for RTUC.
Since this would be a new market power mitigation application in the real-time market that impacts resources with start-up times greater than 60 minutes, CAISO also proposes to amend its tariff to allow consideration of minimum load energy in the assessment of competitive path designation if a resource can start up within the optimization time horizon of the unit commitment process time horizon	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	<ul style="list-style-type: none"> * The minimum load energy if a resource can start up within the optimization time horizon of the unit commitment process time horizon will be included in the RSI calculation. This will be a generalization to add MPM to STUC process.
	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	<ul style="list-style-type: none"> * Enhance current Residual Supply Index (RSI) calculated on binding constraints (transmission and corrective capacity constraints) to account for ability to shut down <ul style="list-style-type: none"> –Applies conditional logic if it can ramp to Pmin in interval based on ramping from initial condition to the interval within horizon and has fulfilled its minimum run time –Impacts real-time calculations for withheld capacity (WC) and supply of counterflow from potentially pivotal suppliers (SCFPPS)

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CAISO will need to enhance its post-processing in the dynamic competitive path assessment to perform a second residual supply index calculation on all testable constraints.	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	<ul style="list-style-type: none"> * Perform second RSI calculation on all critical constraints (transmission and corrective capacity constraints) * CAISO will not default net buyers to fringe competitive suppliers in this calculation * Includes enhancement to capture ability to shut down <ul style="list-style-type: none"> - Applies conditional logic if it can ramp to Pmin in interval based on ramping from initial condition to the interval within horizon and has fulfilled its minimum run time -Impacts real-time calculations for withheld capacity (WC) and supply of counterflow from potentially pivotal suppliers (SCFPPS) * Add enhancement to determine ramp capable movement in real-time relative to initial condition not the prior interval's DOP for the binding interval only * Subtract unloaded capacity from demand for counterflow (in EIM applies to only EIM internal constraints not EIM transfer capacity)

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CAISO will need to enhance its post-processing in the dynamic competitive path assessment to perform a second residual supply index calculation on all testable constraints.	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	* Test for resource advantage based on non-competitive transmission or corrective capacity constraints using non-competitive commitment mitigation criterion * Non-competitive commitment mitigation criterion is met if resource has negative shift factor to a non-competitive binding constraint * Non-competitive commitment mitigation criterion is met if resource has negative shift factor and DOT exceeds or meets the unloaded capacity of non-binding non-competitive constraint
CAISO will need to enhance its post-processing in the dynamic competitive path assessment to perform a second residual supply index calculation on all testable constraints.	8.3.3.2. Apply dynamic market power mitigation to commitment cost components	* Apply mitigation if any interval fails based on any of the resource tests for commitment cost mitigation (test on non-competitive binding, test on non-competitive non-binding). Any commitment cost bids mitigated by the market shall be mitigated to the lower of the market-based bid and the adjusted reference level.

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CAISO proposes that this new mitigation test would be applied to corrective capacity constraints by integrating the two proposed policy changes – CME changes to LMPM to account for a 20 minute corrective capacity product and CCDEBE changes to account for potential market power concerns with commitments.	Apply mitigation to resources within a minimum online constraint for reactive power or voltage concerns	* Apply mitigation to all resources within MOCs. Any commitment cost bids mitigated due to MOCs will be mitigated to the lower of their bid or adjusted reference level.

<p>CAISO proposes to ensure it enhances the default competitive path assessment for purposes of mitigating commitment cost offers associated with exceptional dispatches using the new residual supply index on all critical constraints as well. CAISO proposes that the default competitive path assessment will also be enhanced to support two sets of default path designations: (1) for purposes of mitigating incremental energy portion of the exceptional dispatch (default energy designations) and (2) for purposes of mitigation of commitment costs associated with an exceptional dispatch (default commitment designations).</p>	<p>Apply results of market power mitigation on commitment costs to default assessment for exceptional dispatches</p>	<p>These are all existing rules today: * CAISO shall mitigate energy bids under exceptional dispatches for purposes of (1) addressing reliability requirements related to non-competitive Transmission Constraints; (2) ramping resources with Ancillary Services Awards or RUC Capacity to a dispatch level that ensures their availability in Real-Time; (3) ramping resources to their Minimum Dispatchable Level in Real-Time; and (4) addressing unit-specific environmental constraints not incorporated into the Full Network Model or the CAISO's market software that affect the dispatch of Generating Units in the Sacramento Delta and are commonly known as "Delta Dispatch."</p>
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CAISO proposes to ensure it enhances the default competitive path assessment for purposes of mitigating commitment cost offers associated with exceptional dispatches using the new residual supply index on all critical constraints as well. CAISO proposes that the default competitive path assessment will also be enhanced to support two sets of default path designations: (1) for purposes of mitigating incremental energy portion of the exceptional dispatch (default energy designations) and (2) for purposes of mitigation of commitment costs associated with an exceptional dispatch (default commitment designations).	Apply results of market power mitigation on commitment costs to default assessment for exceptional dispatches	Refinement of: (1) addressing reliability requirements related to non-competitive Transmission Constraints * CAISO will add a static list to the default competitive path assessment * First list is the existing list based on historical data on binding transmission or corrective capacity constraints * Second list is the new list based on historical data on critical transmission constraints, corrective capacity constraints, or MOC (if uncompetitive)
A constraint that passes the following two thresholds will be deemed competitive for purposes of applying mitigation to commitment cost portion of the Exceptional Dispatch: <ul style="list-style-type: none"> o Congestion Threshold: Critical flow in 10 hours or more in the RTUC run where the dynamic competitive path assessment is calculated, and o Competitive Threshold: Deemed competitive 75 percent or more of the instances where the constraint was critical and tested. 	Apply results of market power mitigation on commitment costs to default assessment for exceptional dispatches	Refinement of: (1) addressing reliability requirements related to non-competitive transmission constraints: * Second list will deem paths competitive if the path meets the congestion and competitive thresholds: <ul style="list-style-type: none"> - Congestion Threshold: Critical flow in 10 hours or more under the current time window in any unit commitment run, and - Competitive Threshold: Deemed competitive 75 percent or more of the instances where the constraint was critical and tested. * Second list will deem path uncompetitive otherwise.

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	Apply results of market power mitigation on commitment costs to default assessment for exceptional dispatches	<p>Mitigate exceptional dispatches commitment costs for: (1) addressing reliability requirements related to non-competitive Transmission Constraints; (2) ramping resources with Ancillary Services Awards or RUC Capacity to a dispatch level that ensures their availability in Real-Time; (3) ramping resources to their Minimum Dispatchable Level in Real-Time; and (4) addressing unit-specific environmental constraints not incorporated into the Full Network Model or the CAISO's market software that affect the dispatch of Generating Units in the Sacramento Delta and are commonly known as "Delta Dispatch:</p> <ul style="list-style-type: none"> -Mitigate minimum load to the higher of minimum load energy revenues and the lower of the market-based bid and the reference level <ul style="list-style-type: none"> - max[LMP*Lower Operating Limit (LOL), Min(reference level, bid)] -Mitigate start-up and transitions to the lower of the market-based bid and the reference level <ul style="list-style-type: none"> - min(reference level, bid)

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	Existing functionality (implemented as part of Aliso Canyon initiative)	* Allow ISO to send D+2 RUC report to SCs permanent.
Consequently both the manual gas price spike procedure and the manual update of day-ahead gas price index to include an approximation of next day gas index will not be supported. If able to automate the inclusion of approximation of next day gas index, CAISO will revise. (Note: Business decided automation was not a hard stop and ELT approved inclusion)	Existing functionality (implemented as part of Aliso Canyon initiative)	* Use the webICE Volume Weight Average Price (VWAP) pull between 8-9AM (ICE calculated midpoint made available prior to official index publication) in the CAISO's day-ahead gas price index formulation.
New section of paper titled 'Reference Levels' - CAISO proposes that the formulation for the energy reference level will be calculated consistently for the incremental energy cost estimates for all market purposes including generating or inserting bids.	Formulate energy cost reference levels	* When generating energy bids the CAISO will use the default energy bid values based on the resources' energy reference level option (negotiated, LMP, or variable) (system shall use the reference level which will reflect the way it was calculated or adjusted). *Non-Resource Specific Resource Adequacy (NRS-RA) resources will continue to generate bids under the existing rules.

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Program Management Office

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<p>The minimum load reference level is determined as described in section 8.1.3.2 with the additional inclusion of the DEB integration on top of the sum of the proxy costs scaled by 110% and any eligible opportunity cost...The minimum load reference level is determined as described in section 8.1.3.2 with the additional inclusion of the DEB integration on top of the sum of the proxy costs scaled by 110% and any eligible opportunity cost. For the purpose of this “no bid” process, the minimum load reference level is determined as described in section 8.1.3.2 with the additional inclusion of the DEB integration on top of the sum of the proxy costs scaled by 110% and any eligible opportunity cost. If a resource submits a minimum load re-rate, the commitment cost reference levels used as a benchmark must use the re-rated minimum operating level for purposes of establishing benchmark against the 200%.</p>	<p>Formulate minimum load cost reference levels</p>	<p>* Estimated option for minimum load cost reference level will be calculated as the sum of the proxy cost multiplied by configurable % (headroom scalar) plus any eligible opportunity cost adders.</p> <ul style="list-style-type: none"> -CAISO will initially set the headroom scalar in the minimum load cost reference levels at 125%. The headroom scalar will automatically decrease the headroom scalar from 125% to 110% in 18 months. -Headroom scalars used to calculate the reference level for each component of the supply offer should be configured at the same level. - Ex-ante adjustment rules will use the 'base' reference level MLC (not including pmin rerates). <p>* When generating commitment cost bids, the CAISO will use the estimated or negotiated values based on the resources' commitment cost reference level option.</p>

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	Formulate minimum load cost reference levels	<p>* If resource has rerated its Pmin then:</p> <ul style="list-style-type: none"> - CAISO will continue to apply the integration of its default energy bid curve associated with the portion moved under the rerated minimum load. CAISO will enhance the current practice: - The market will introduce a scaling factor defined as the bid used in the market (mitigated as applicable) / reference level bid (including adjustment). For a market run, if there is any pmin rerate market will apply the scaling factor to the calculated DEB value, add it to the market bid, use the sum in the optimization and pass that value to the BCR qualification process.

Commitment Cost Default Energy Bids Enhancements (CCDEBE) Business Rules		
Paragraph	Policy Statement	High Level Project Objectives
<p>Minimum load costs- operating the unit at the minimum operating level (Pmin) where a unit cannot drop below without compromising the unit's operation including costs of producing energy up to Pmin as well as run hour costs unrelated to any energy production possible even for resources with 0 MWh minimum operating level, and, supporting minimum load costs associated with run hours not energy production for non-gas resources' without minimum operating levels will be made in the CAISO's proxy cost calculations; and, supporting minimum load costs associated with run hours not energy production for non-gas resources' without minimum operating levels will be made in the CAISO's proxy cost calculations. As stated in Section 8.2.3, CAISO proposes to enhance its systems to support minimum load costs associated with run hour costs for non-gas resources without a conventional minimum operating level. As result, the minimum load cost field in Master File needs to clarify that, if on proxy cost and a non-gas unit, the minimum load cost field is for cost associating with run hours, and the first segment of the average cost curve is for costs associated with producing energy up to that minimum level.</p>	<p>Formulate minimum load cost reference levels</p>	<ul style="list-style-type: none"> * Have one additional component for proxy minimum load costs for resources that will be independent from the PMin level. * This field may be used by proxy cost for all resources to reflect costs associated with run hours. * The average cost curve is for non-gas units only and for costs associated with providing energy. The first segment is the cost for providing energy up to that minimum level.

Commitment Cost Default Energy Bids Enhancements (CCDEBE) Business Rules		
Paragraph	Policy Statement	High Level Project Objectives
<p>Under the proposed policy, the commitment cost reference levels will be enhanced to include the 110% scalar representing incidental costs above the fuel cost proxy.</p> <p>As described above in the section 8.1.3.2 on hourly bids and the use of these reference levels when no bid is present and the market needs to dispatch a resource to its minimum operating level, reference levels are the sum of the proxy cost as calculated today multiplied by 110% plus any eligible opportunity cost adders.</p>	<p>Formulate start-up cost reference levels</p>	<p>* Estimated option for start-up cost reference level will be the sum of the start-up proxy cost (current) multiplied by configurable scalar plus any eligible opportunity cost adder (existing once CCE3 goes live).</p> <p>*CAISO will initially set the headroom scalar in the startup cost reference levels at 125%. The headroom scalar will automatically decrease the headroom scalar from 125% to 110% in 18 months.</p>

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Paragraph	Policy Statement	High Level Project Objectives
<p>Under the proposed policy, the commitment cost reference levels will be enhanced to include the 110% scalar representing incidental costs above the fuel cost proxy.</p> <p>As described above in the section 8.1.3.2 on hourly bids and the use of these reference levels when no bid is present and the market needs to dispatch a resource to its minimum operating level, reference levels are the sum of the proxy cost as calculated today multiplied by 110% plus any eligible opportunity cost adders.</p>	<p>Formulate transition cost reference levels</p>	<p>* Transition cost reference level on upward transition cost bids is the difference between the to configuration start-up cost reference level (excluding the opportunity cost adder) and the from configuration start-up reference level (excluding the opportunity cost adder), plus the start-up opportunity cost adder for the 'To' configuration transition.</p> <p>* Transition cost reference level on downward transition cost bids is \$0/MWh.</p>